AKRIDIN, Dmitriy Vladimirovich, starshiy prepodavatel; GALKANOVA, Nina

Dmitriyevna, assistent; GVOZDOVSKIY, Viktor Il'ich, assistent;
GLUKHOVSKOV, Aleksandr Petrovich, inzh.; SAMOYLOV, Boris Nikolayevich, dotsent, kand. tekhn. nauk; YAKUBOVSKIY, Boris Vasil'yevich, prof. Prinimali uchastiye: POLONSKIY, A.V., assistent;
LEONT'YEV, G.V., assistent; BITYUTSKIY, A.I., assistent; DAVYDOV,
S.S., doktor tekhn. nauk, prof., red.; MIKHAYLOV, K.V., kand. tekhn.
nauk, nauchnyy red.; BUDARINA, E.M., red. izd-va; GARNUKHIN, Ye. K.,
tekhn. red.

[Prestressed concrete abroad; materials] P redvaritel'no napriazhennyi zhelezobeton za rubezhom; materialy. Pod red. S.S.Davydova i B.V. IAkubovskogo. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialem, 1961. 343 p. (MIRA 14:10)

1. International Congress of Prestressed Concrete. 3rd, Berlin, 1958.
2. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Davydov).3. Kafedra zhelezobetonnykh i kamennykh konstruktsiy Kuybyshevskogo inzhenerno-stroitel'nogo instituta i chleny Kuybyshevskogo filiala Komissii po sbornomu i predvaritel'no napryazhennomu zhelezobetonu Akademii stroitel'stva i arkhitektury SSSR (for Akridin, Galkanova, Gvozdovskiy, Glukhovskov, Samoylov, Yakubovskiy) (Prestressed concrete)

AKRIDIN, Dmitriy Vladimirovich, starshiy prepodavatel; GALKANOVA, Nina

Dmitriyevna, assistent; GVOZDOVSKIY, Viktor Il'ich, assistent;
GLUKHOVSKOV, Aleksandr Petrovich, inzh.; SAMOYLOV, Boris Nikolayevich, dotsent, kand.tekhn.nauk; YAKUBOVSKIY, Boris Vasil'yevich, prof. Prinimali uchastiye: POLONSKIY, A.V., assistent;
LEONT'YEV, G.V., assistent; BITYUTSKIY, A.I., assistent; DAVYDOV,
S.S., doktor tekhn.nauk, prof., red.; MIKHAYLOV, K.V., kand.tekhn.
nauk, nauchnyy red.; BUDARINA, E.M., red. izd-va; GARNUKHIN, Ye.K.,
tekhn. red.

[Prestressed concrete abroad; materials] P redvarietel'no napriazhennyi zhelezobeton za rubezhom; materialy. Pod red. S.S. Davydova i B.V. IAkubovskogo. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i.stroit. materialam, 1961. 343 p. (MIRA 14:10)

1. International Congress of Prestressed Concrete. 3rd, Berlin, 1958.
2. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Davydov). 3. Kafedra zhelezobetonnykh i kamennykh konstruktsiy Kuybyshevskogo inzhenerno-stroitel'nogo instituta i chleny Kuybyshev-zhelezobetonu Akademii stroitel'stva i arkhitektury SSSR (for Akridin, Galkanova, Gvozdovskiy, Glukhovskov, Samoylov, Yakubovskiy)

(Prestressed concrete)

GALKANOVA, N.D., inzh.; KRAMAR', V.G., inzh.

Prestressed 3x12m slabs with strand reinforcement for roofs of industrial buildings. Bet.1 zhel.-bet. 9 no.12:532-537 D '63. (MIRA 17:2)

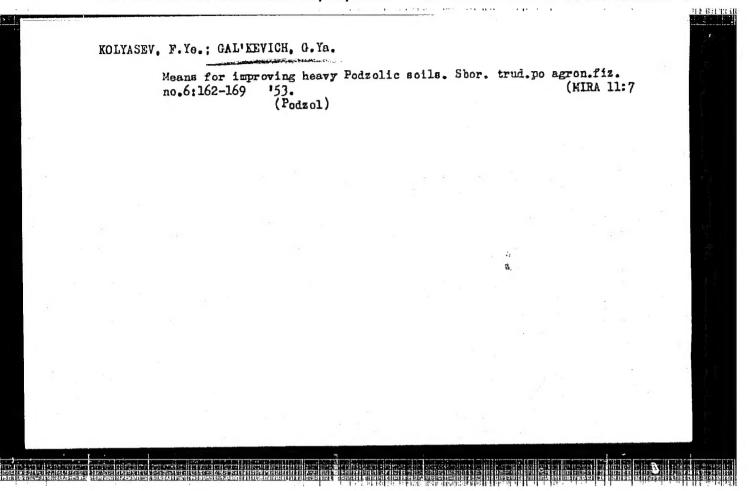
L 39872-66 ACC NR: AP6018145 SOURCE CODE: UR/0020/65/162/005/1198/1200 AUTHOR: Sushko, N. G.; Meyerson, Ye. M.; Galkel', V. R. ORG: Institute of Experimental Biology, AMN SSSR (Institut eksperimental noy biological AMN SSSR); Central Institute of Traumatology and Orthopedics, Ministry of Health SSSR (Tsentral'nyy institut travmatologii i ortopedii Ministerstva zdravookhraneniya SSSR); Institute of Physical Problems AN SSSR (Institut fizicheskikh problem AN SSSR) TITLE: Influence of deep freezing on the grafting and antigenic activity of skin homotransplants ~~~ SOURCE: AN SSSR. Doklady, v. 162, no. 5, 1965, 1198-1200 TOPIC TAGS: rabbit, skin physiology, blood circulation ABSTRACT: The viability of rabbit skin, exposed for one day to a medium containing 15% glycerin or 10% dimethyl sulfoxide, then frozen in dry ice, liquid nitrogen, or liquid helium, was determined according to its survival after autotransplantation. state of the homotransplants of frozen skin was determined according to the periods of restoration and the disturbance of blood circulation in them. The autotransplants treated by various methods proved viable and in most cases gave true and permanent grafts. However, homotransplants, subjected to freezing, as a rule, died on the ninth to 13th day. Repeated homotransplants from the Card 1/2

L 39872-66	The second secon		()
ACC NR. AP6018145		111	
	than primary transp	lants, indicat-	
same donors died more	rapidly than primary transp	he recipient	
ing pronounced sensit	izacion of one organ transpl	ant. An inves-	-
under the influence o	one primary around no	des indicated	•
tigation of the react	tion of the regional lymph he stivity of skin homotransplan stand while the duration of	its subjected to	
that the antigenic ac	To we the met of	curvival of	
deep freezing is reva	tually does not differ from the authors conclude the	that in homotrans-	
such transplants vii	skin. The authors conclude t	that an attempt	
plantation of Trosis	sical incompatibility in home	plastic skin	
to overdome Immeriores	ance of low temperature is unjusti	fied. This paper was	1 .
transplants by the influe	ence of low temperature is unjusti V. A. Engel'gardt on 17 March 196	fied. This paper was 5. Orig. art. has:	
transplants by the influence or sented by Academician	ence of low temperature is unjusti V. A. Engel gardt on 17 March 196	fied. This paper was 5. Orig. art. has:	
presented by Academician 2 tables. [JPRS]	V. A. Engel gardt on 17 March 196	5. Orig. art. has:	
transplants by the influe presented by Academician 2 tables. [JPRS]	V. A. Engel gardt on 17 March 196	fied. This paper was 5. Orig. art. has:  / OTH REF: 005	
presented by Academician 2 tables. [JPRS]	V. A. Engel'gardt on 17 March 196	5. Orig. art. has:	
transplants by the influe presented by Academician 2 tables. [JPRS]	V. A. Engel gardt on 17 March 196	5. Orig. art. has:	
transplants by the influe presented by Academician 2 tables. [JPRS]	V. A. Engel gardt on 17 March 196	5. Orig. art. has:	
transplants by the influe presented by Academician 2 tables. [JPRS]	V. A. Engel gardt on 17 March 196	5. Orig. art. has:	
transplants by the influe presented by Academician 2 tables. [JPRS]	V. A. Engel gardt on 17 March 196	5. Orig. art. has:	
transplants by the influe presented by Academician 2 tables. [JPRS]	V. A. Engel gardt on 17 March 196	5. Orig. art. has:	
transplants by the influe presented by Academician 2 tables. [JPRS]	V. A. Engel gardt on 17 March 196	5. Orig. art. has:	
transplants by the influe presented by Academician 2 tables. [JPRS]	V. A. Engel gardt on 17 March 196	5. Orig. art. has:	
transplants by the influe presented by Academician 2 tables. [JPRS]	V. A. Engel gardt on 17 March 196	5. Orig. art. has:	
transplants by the influe presented by Academician 2 tables. [JPRS]	V. A. Engel gardt on 17 March 196	5. Orig. art. has:	

Wilk, 2. I.

246T6

1.1 04:576 Brare not always identical, one must assume infact that the results of the react cons with A and reaction with B is more frequent. the temp of the patients is normal, a positive served in the early days of the disease. When of patients recovered from scarlet fever (A) and scarlet fever patients may be adsorbed on human I pp 25, 26 homogeneity of the antigen. tive hemagglutination reaction is most often obantiscarlet fever streptococci sera (B). A positected by the hemagglutination reaction with sera A specific antigen from the throat washings of "Zhur Mikrobiol, Epidemiol, i Immunobiol" No 2, Acad Kiev Order of Labor Red Banner Med Inst imeni Yu.P. Tutyshkina, Z.N. Galker, Chair of Epidemiol, USSR/Medicine - Infectious Diseases "The Hemagglutination Reaction in Scarlet Fever," (0) erythrocytes. This antigen can then be de-A. A. Bogomolets In view of the Feb 53 24616



USSR / Soil Science. Organic Fertilizers.

J

Abs Jour: Ref Zhur-Biol., No 21, 1958, 95768.

: Gal'kevich, G. Ya. Author

: Northern Scientific-Research Institute of Water

Engineering Melioration.

: Influence of Sapropel on Water, Physical and Title

Chemical Properties of Soil

Orig Pub: Tr. Severn. n.-i. in-ta gidrotekhn. i melior.,

1957, vyp. 13, 105-115.

Abstract: Sapropol (S) was studied in field experiments in kolkhozes of Rostov Rayon, Yaroslavskaya Oblast on clayey and sandy soils, with its application

by sowing along the surface of the plowland (under potatoes and onions), in holes (under potatoes) and by means of pouring it out of a pipeline (under grasses). S. contains: 15.9-29.41% of

Card 1/2

inst

CIA-RDP86-00513R000614110019-8" **APPROVED FOR RELEASE: 07/16/2001** 

GAL'KEVICH, I.D., veterinarnyy vrach

Subcutaneous administration of heterogenic blood to animals following acute bloodletting. Trudy NIVI 1:240-244 '60.

(MIRA 15:10)

(Blood as food or medicine)(Veterinary medicine)

ORANSKIY, N., inzh.; GAL'KEVICH, L., inzh.

Tractors on livestock farms. Nauka i pered. op v sel'khoz. 9 no.6:57-59 Je '59.

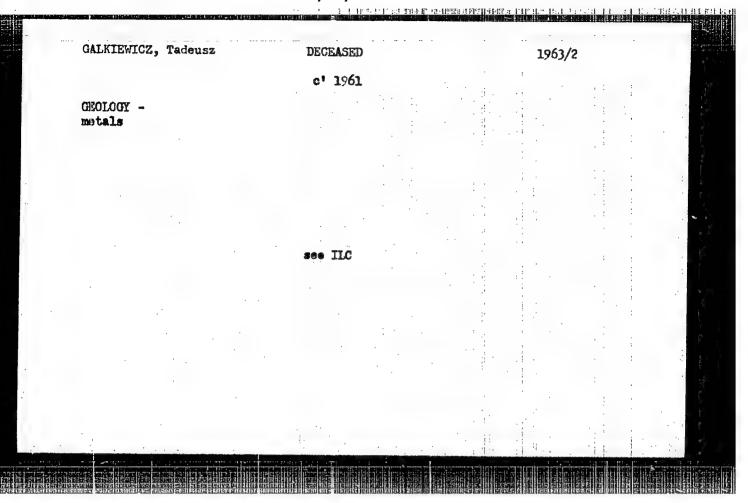
(MIRA 12:9)

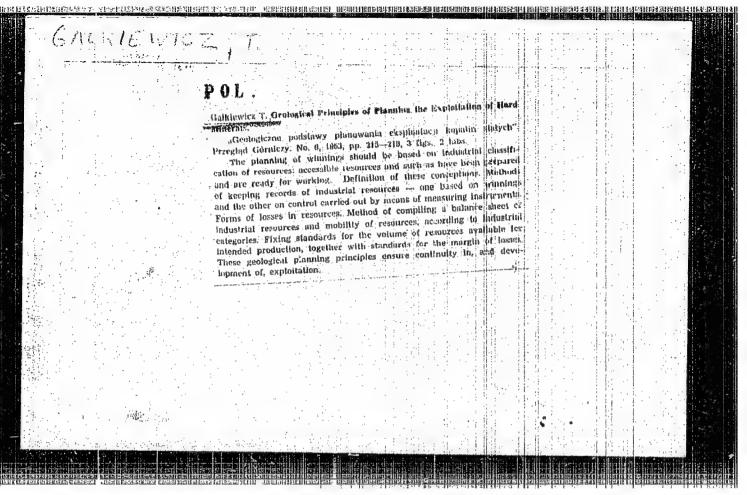
(Tractors)

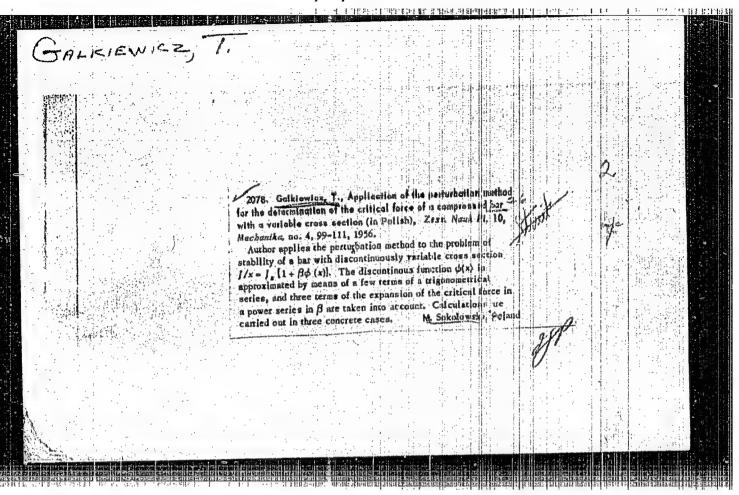
FAYTEL'EERG, R.O.; OCHAN, S.I.; GAL'KHOVAYA, Yo.I. [Hol'khova, IE.I.]

Absorption of glucose and chlorides in the small intestine of sheep following administration of bromine and caffeine. Fiziol. zhur. [Ukr.] 6 no. 5:612-621 S-0 '60. (MIRA 13:10)

1. Kafedra fiziologii Odesskogo sel'skokhozyaystvennogo instituta. (ABSORPTION (PHYSIOLOGY)) (EROMINE) (CAFFEINE)







D

Poland/Cosmochemistry. Geochemistry. Hydrochemistry.

Abs Jour : Ref Zhur-Khimiya, No 2, 1958, 4183.

Author : Galkiewicz T. Inst

GALKIEULE,

: Not given.
: Genesis of Silesian-Cracow Zink-Lead Deposits
In K. Keil's Interpretation. Title

Orig Pub : Przegl. Geol. 1957, 5, No 7, 314-319.

Abstract : No abstract.

Card 1/1

GALKIEWICZ, T.

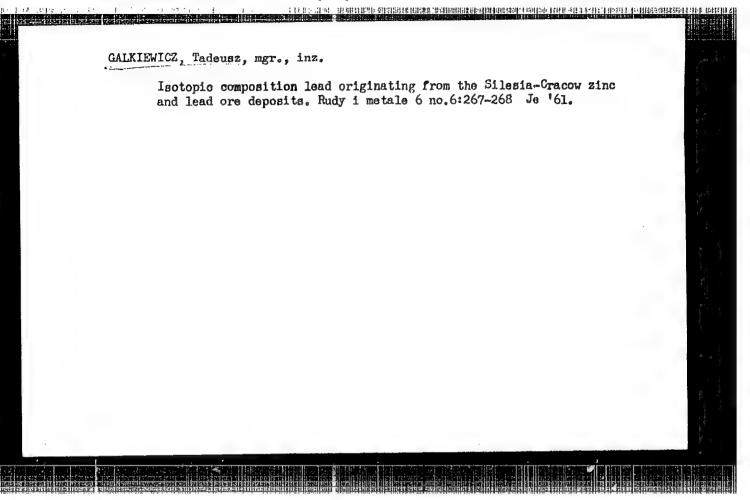
TYPHNOLOGY

PERIODICAL: PREZGLAD GEOGICZNY, Vol. 6; no. 2, Feb. 1953.

GALKIEWICZ, T. The determination of the average metal content in metallic ores. p. 31.

Monthly List of East European Accessions (EEAI) LC Vol. 8, no. 4

April 1959, Unclass.



BIALACZENSKI, Antoni; GALKIEWICZ, Tadeusz

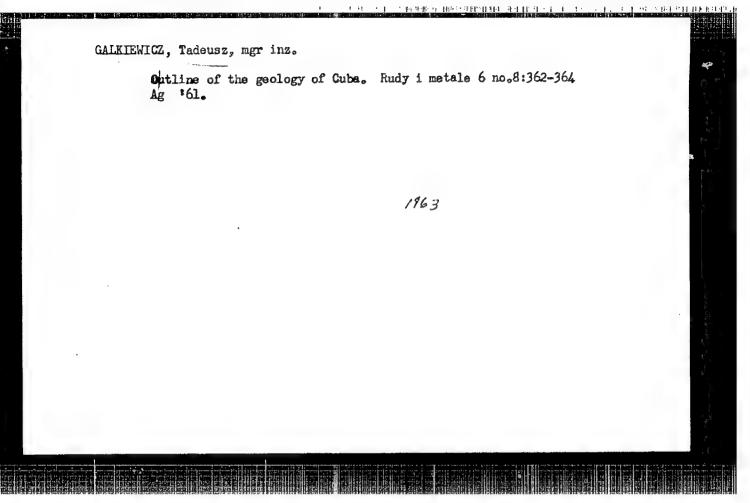
The pyrite - copper Buenavista deposits in Cuba. Przegl geol 11 no.7: 383-387 Jl '61.

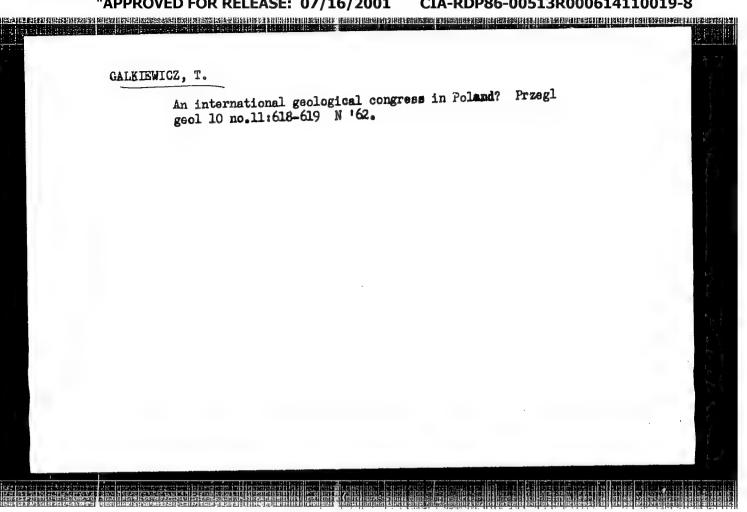
1. Ministerstwo Przemyslu Ciezkiego.

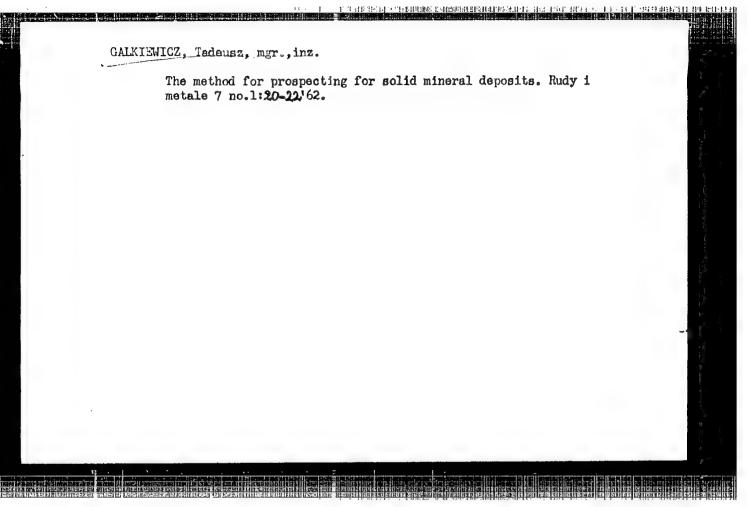
CALKIEWICZ, Tadeusz, mgr., inz.

Eases of geological map accuracy. Rudy i metale 6 no.12:544 D 161.

1. Redaktor maukowy miesiecznika "Rudy i metale niezelazne."







GALKIEWICZ, Tadeusz, mgr.,inz.

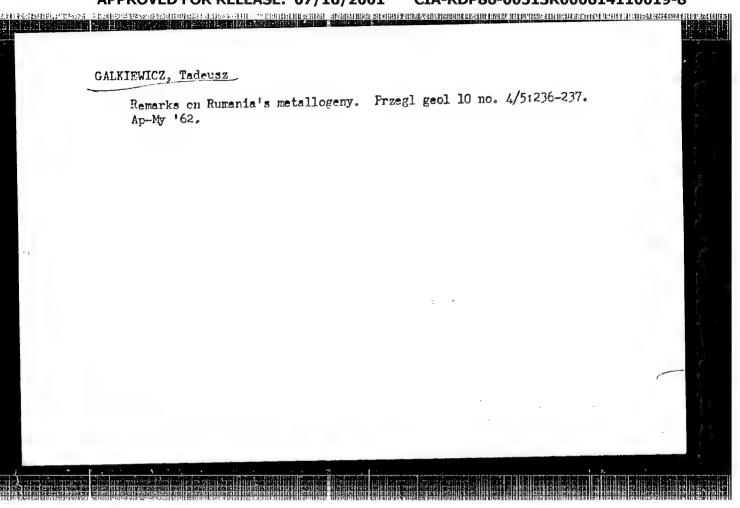
Indications for prospecting mineral raw material deposits.
Rudy i metale 7 no.2:54-59 '62.

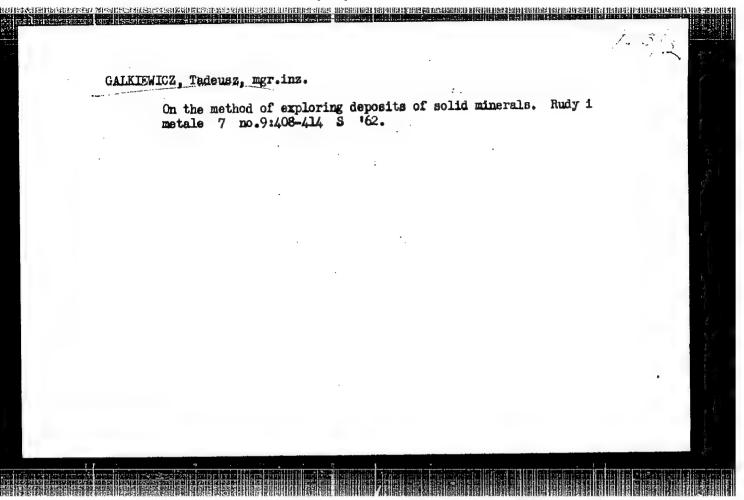
1. Redaktor naukowy miesiecznika "Rudy i Metale niezelazne"

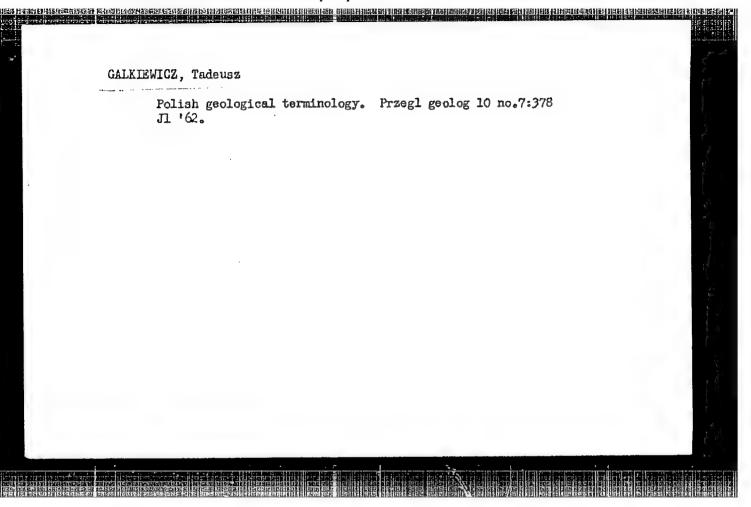
GALKIEWICZ, Tadousz, mgr.,inz.

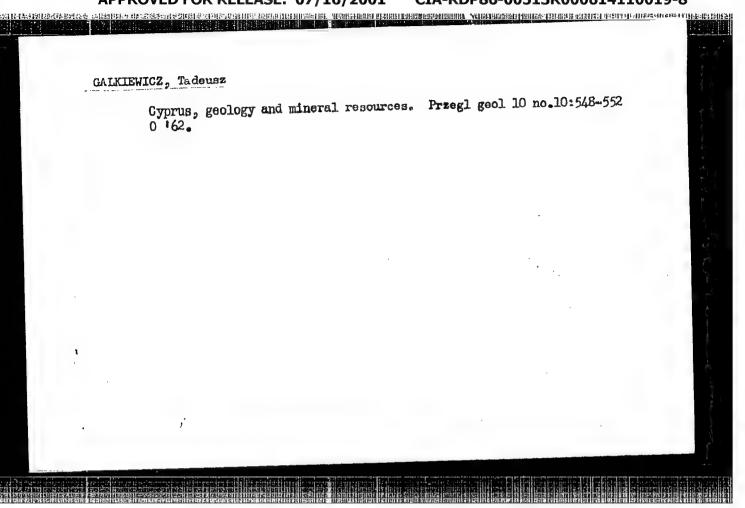
Premises for the appearance of mineral deposits. Rudy i metale 7 no.3:138-145 162.

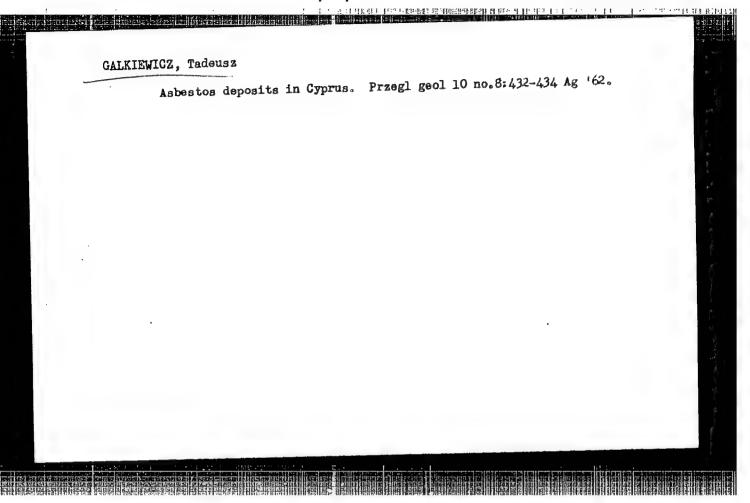
1. Redaktor naukowy miesiecznika "Rudy i metale niezelazne"

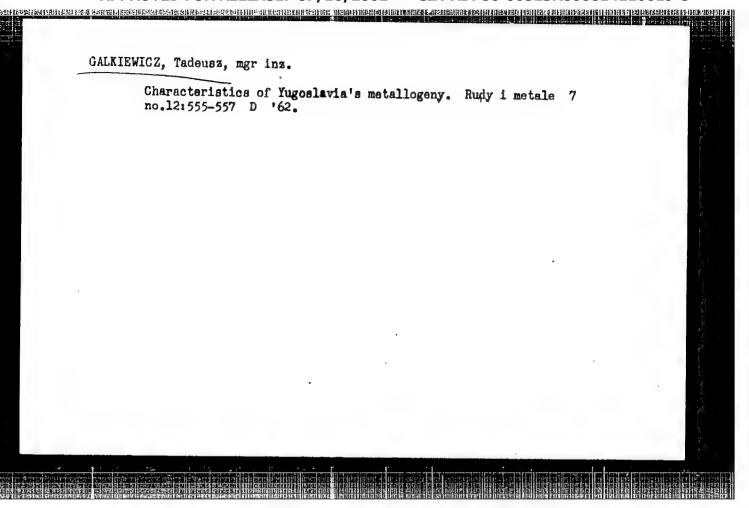












in the control of the

ACCESSION NR: AT4017646

P/2534/63 /000/010/0021/0032

AUTHOR: Galkiewicz, Tadeusz

TITLE: Stability of long orthotropic rib-reinforced long cylindrical

shell

SOURCE: Lodz. Politechnika. Zeszyty naukowe, no. 51, 1963. Mechanika (Mechanics), no. 10, 21-32

TOPIC TAGS: shell, cylindrical shell, orthotropic shell, orthotropic cylindrical shell, rib reinforced shell, rib reinforced long shell, rib reinforced cylindrical shell, shell stability, shell endurance, shell stress, shell torsion, long twisted shell stability

ABSTRACT: The purpose of the work is to find approximate and relatively simple final equations for the stress and torsion moment for twisted long orthotropic rib-reinforced shells. This problem was solved by Z. Parszewski (Zeszyty naukowe Politechniki Łódzkiej, Mechanika, no. 2, 1954) using the differential equations of volume balance. The present solution is based on the energy method, using the equations of the theory of shells of low curvature, which are

Card 1/2

ACCESSION NR: AT4017646

solved by the Ritz method. The resultant formulas show the effects of the material properties on the solutions and at the same time permit an analysis of the reinforcing action of the ribs on the shells. The calculated data for the orthotropic shells were compared with those for isotropic shells. Orig. art. has: 1 figure and 39 formulas.

ASSOCIATION: Łódź, Politechnika, Katedra Wytrzymałości Materiałów (Łodz, Polytechnic Institute, Department of Strength of Materials).

SUBMITTED: 00

DATE ACQ: 24Mar64

ENCL: 00

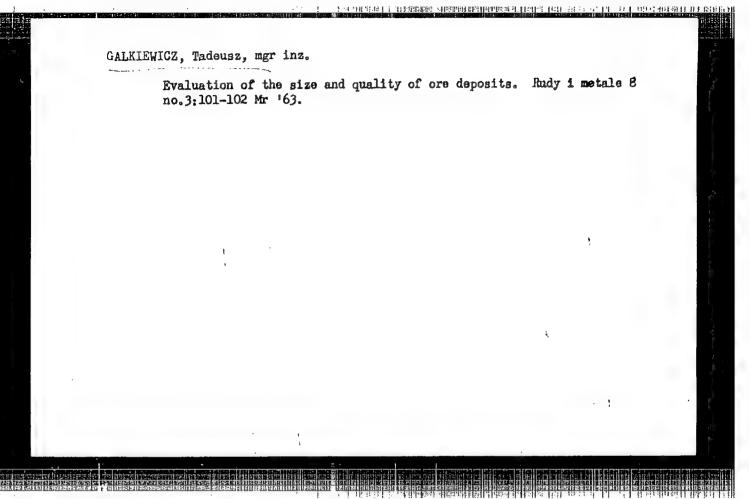
SUB CODE:

MM. MD

NO REF SOV: 000

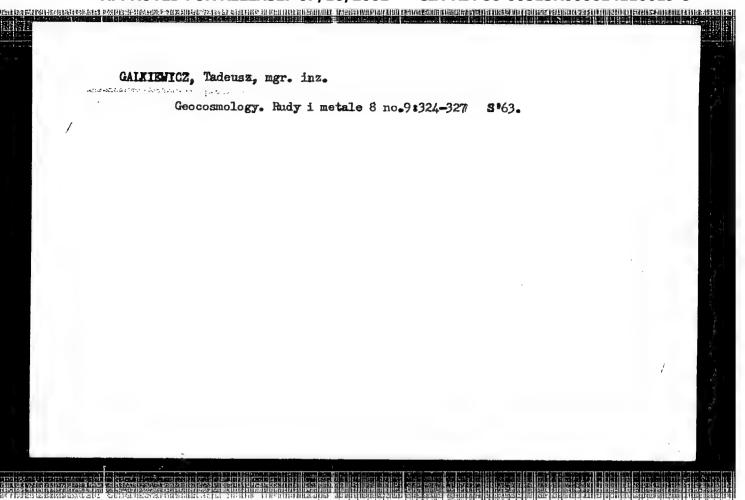
OTHER: 004

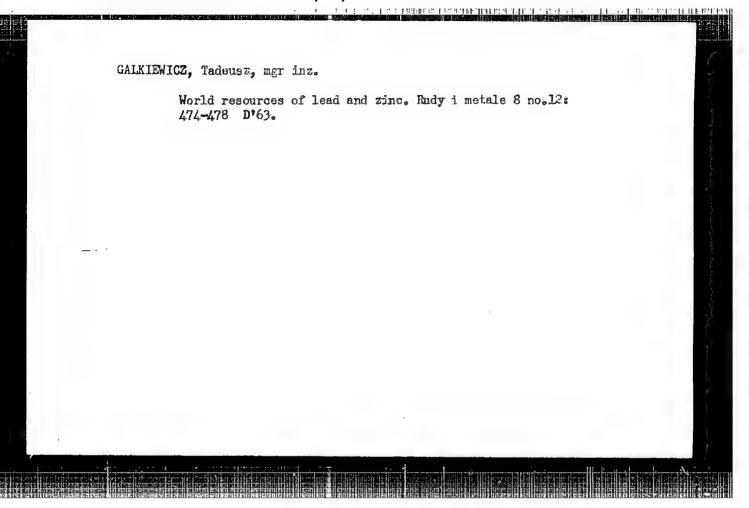
Card 2/2



GALKIEWICZ, Tadeusz, mgr inz.

"Motals" by J. Loth, Z. Petrazycka. Reviewed by Tadeusz Galkiewicz. Rudy i metale 8 no.4:140-141 \*63.





GALKIEWICZ, Tadeusz, mgr inz.

Metallogenesis in Turkey and its characteristics. Rudy i metale 9 no.2:89-92 F 64.6

GALKIERICZ, Tadeusz, mgr inz

Poland's raw material base of nonferrous metals. Hudy i metale 9 no.7:339-343 Jl '64.

1. Chief Geologist, Association of Nonferrous Mining and Metallurgy, Katowice.

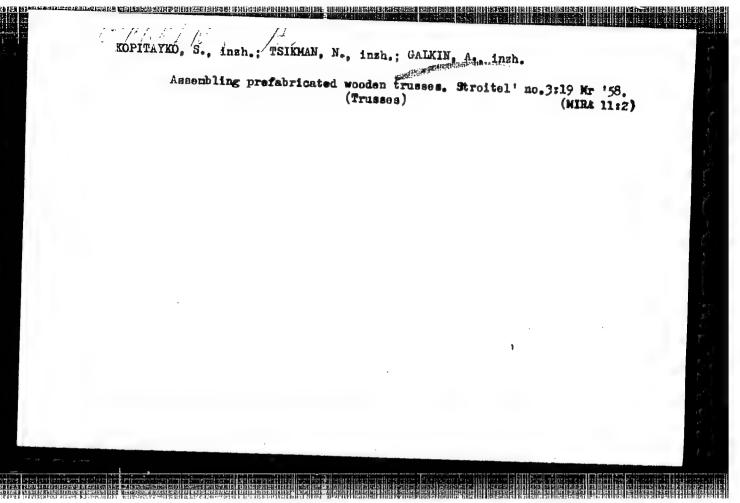
GALALEWICE, Tadeusz, dr. inz.

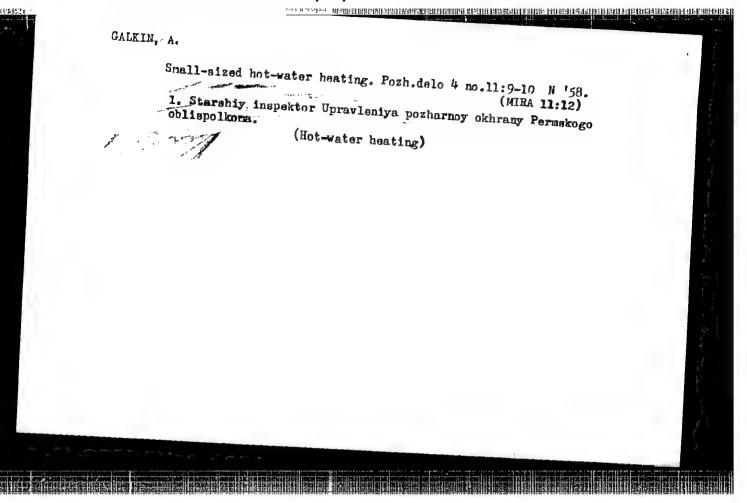
Problem of nonlinear stability of orthotropic cylinder shell subject to torsion. Przegl mech 23 no.24:722 25 D 64.

1. Department of Material Strength, Technical University, Lodz.

GALKIN, A.

In the Cherno-Yarskiy Machinery Station for Livestock farms, MTS 12, No 8, 1952.





GALKIN, A.

Selling building materials and supplies in villages, Sel', stroi. 9 no.1:6-7 Ja-F '59. (MIRA 13:2)

1. Chlen pravleniya TSentrosoyuza. (Building materials)

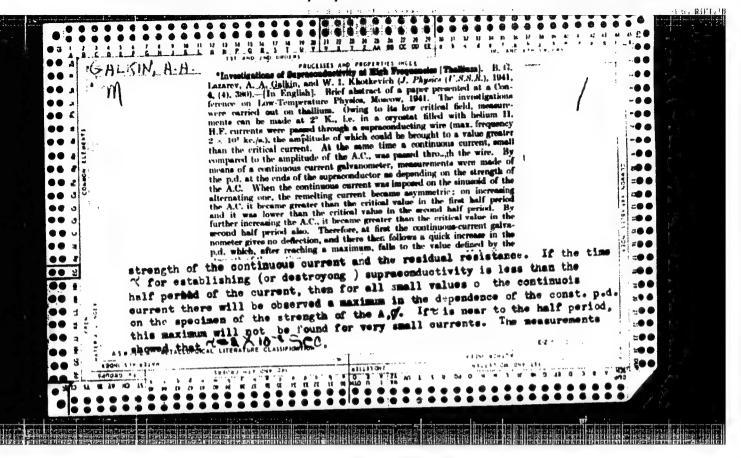
POPOVICH, G., general-mayor voysk svyazi; GALKIN, A., podpolkovnik

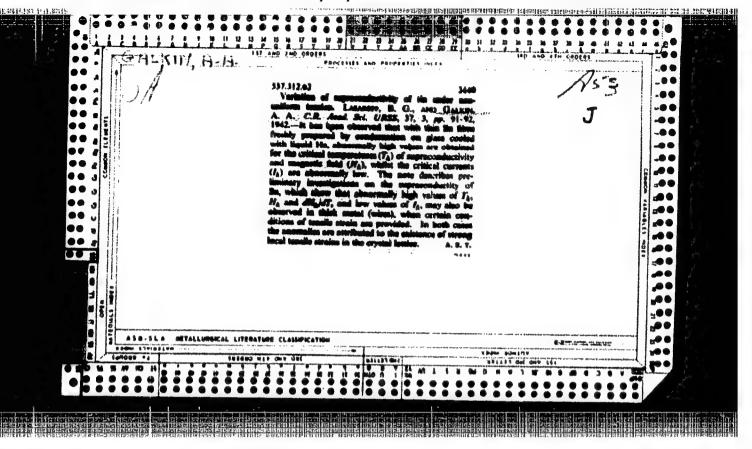
Refresher training periods are an important method in
instructing communications specialists. Voen. vest. 40
no. 3:98-99 Mr '61. (MIRA 14:2)

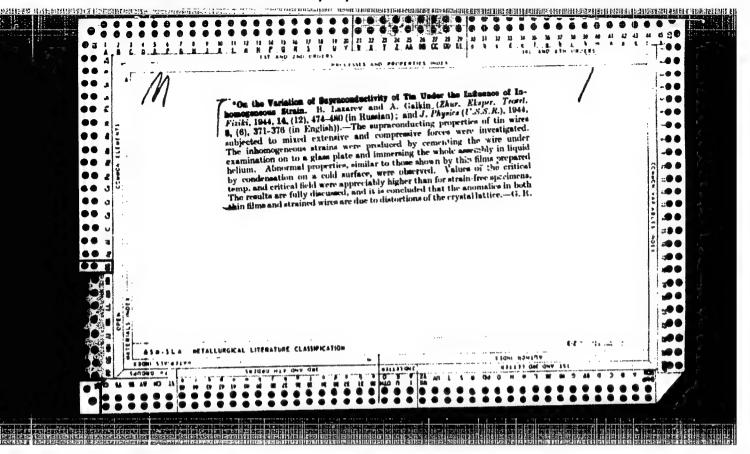
(Communications, Military-Study and teaching)

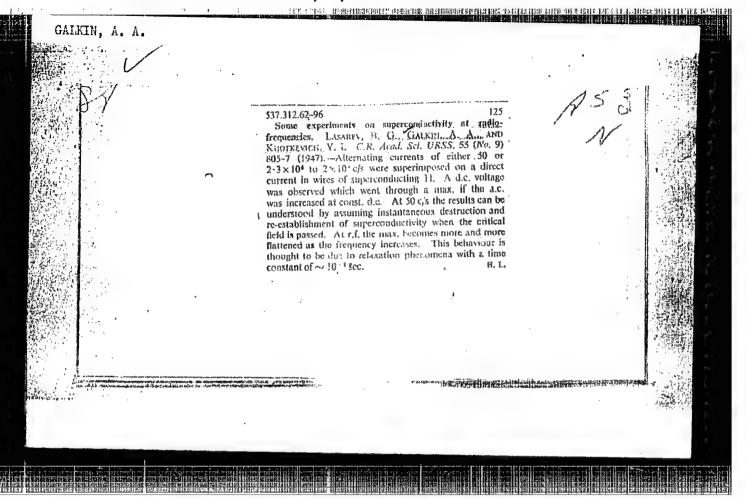
		A STATE OF THE STA	HARREST RESEMBLY RELIEVED		
L 6029 EWP(b) ACCESSI	9-65 EPF(c)/EPF /EWP(t) Pr-4/Pu ON NR: AT5009445	(n)-2/EWG(c)/EEC() -4/Peb IJP(c)	7707年 - 47 ALEE 1941	1454 1 2 0 4 14	
AUTHOR:	Bratashevski, Yu.	A.; Galkin, A. A.	Ivanchenko, Yu.	/54/000/000/0 <sub>10</sub>	
SOURCE:	Conference on Low	Temperature Physics			13 15+1
TOPIC TA	GS: indium antimor	lide, combined resor	ces, 1964, 102-10	n tura	Prague,
Oxvoen t	density 8 x 1013 cm	1ed combined resons	nce in an netype	Inda A.	
line. die	ospectroscope oper	in the antinode of	m of a lens 0, 405 the electric fie	mm in diamete	uid- i and
was 1.1 x ple. The	1014 cm-3, which we cyclotron resonance	ization. The calcuas in good agreemen	region of higher Linted value of to it with values ob-	magnetic field, he carrier dens	onince , was sity
lines. The Card 1/2	cyclotron resonance polarization, making lines disappeare	ng it possible to o	reciably carcellabserve four addit as placed in the	d by producing lonal absorpti	sem- Lon- on
		10.24		Total of the	

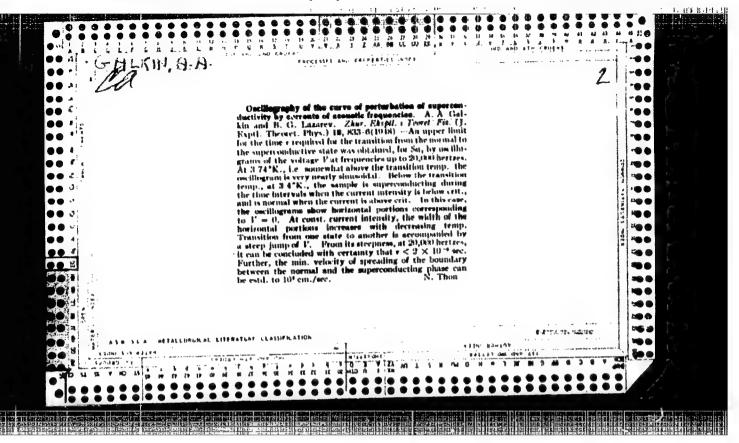
L 60299-65 ACCESSION NR: A15009445
high-frequency resonator magnetic field, showing their excitation to be electrical in nature. Analysis showed the spin line to be isotropic within the limits of experimental error, in spite of the fact that the theory of combined resonance calls for some anisotropy. This may be caused by scattering from impurities at hydrogen
temperatures. The anisotropy was rechecked at liquid-nitrogen temperature, using a spherical sample 0.5 mm in diameter with carrier density 2 x 10.14 cm <sup>-3</sup> . In this gitudinal polarization, so that the observation of the anisotropy was confined to a results showed that the derivatives of the absorption curve constitute superpostplays an important role. Orig. art. has: 4 figures.
ASSOCIATION: Fiziko-tekhnicheskiy institut nizkikh temperatur, Khar'koy (Physico-
SUBMITTED: 00 ENCL: 00 SUB CODE: SS , W>
Card 2/2

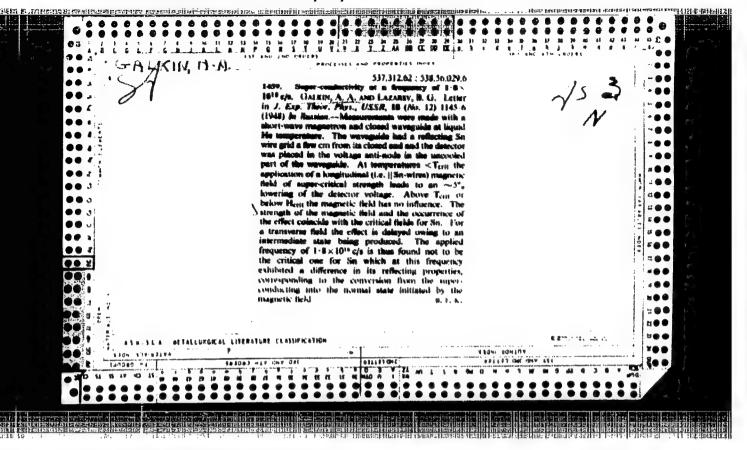


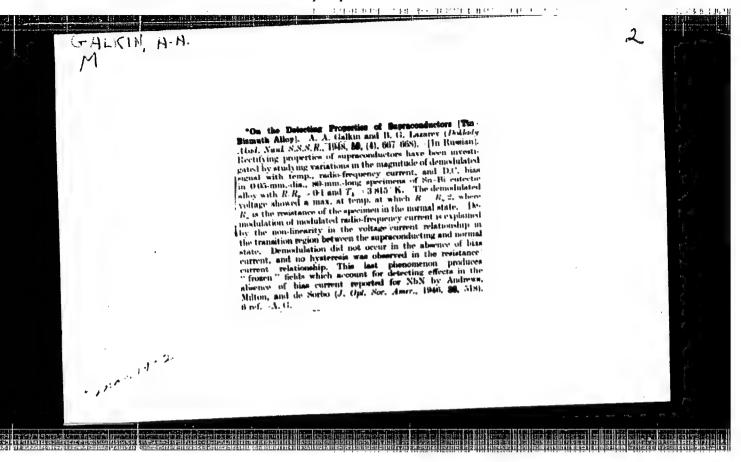


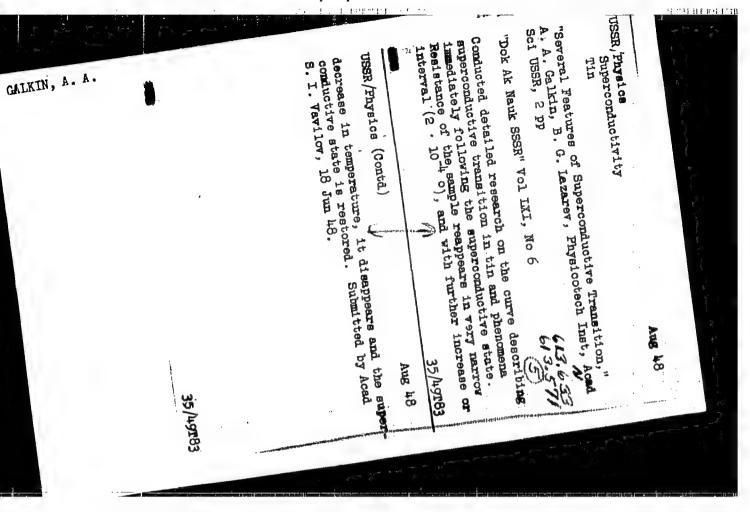












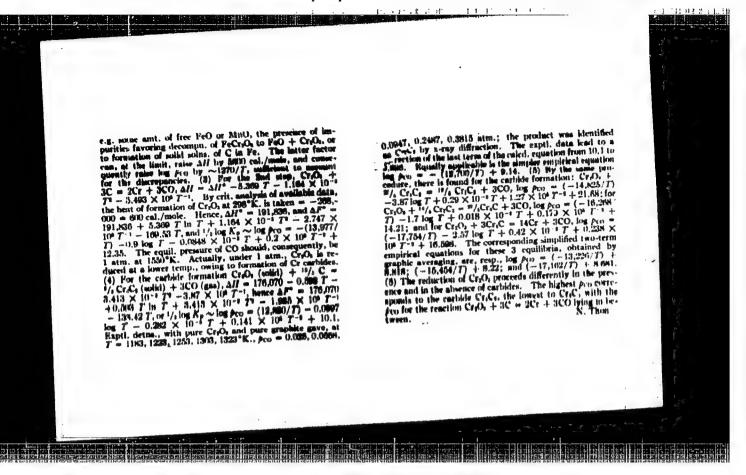
APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R000614110019-8"

Chem NA STUKIN, H.A.

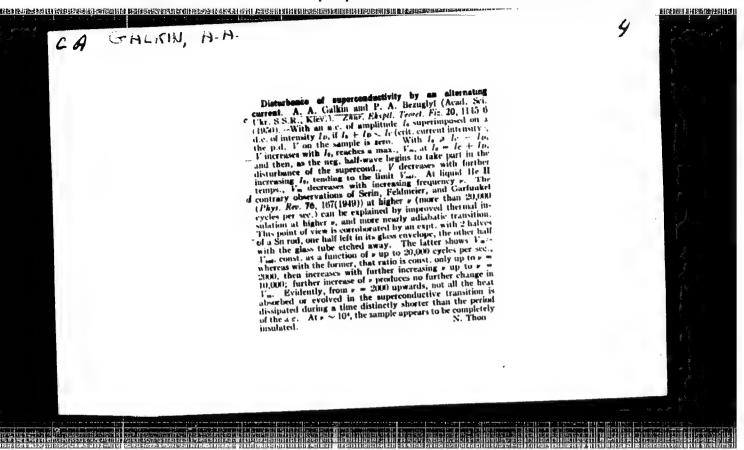
filomo particularitios of the transition into the superconducting state. I...A. A. Galkin, Ya. S. Kan, and B. G. Lazarev (Phys.-Tech. Inst., Akud. Sci. Ukr. S.S.R., Kiev). Zhar. Elajti. Teorei. Fiz. 20, 2055-70(1950); cf. C.A. 48, 457g.—On continuous lowering of the temp. at the uniform rate of 0.0005°/min. in the vicinity of 3.7°K., a 0.03-mm-diam., nearly-single-crystal wire of pure Sa, annealed at 100°, showed fluctuations of the elec. resistance, with, first, sharp variations by 20-30% and returns to the normal value, and later a fall by 20-70% which, on very slow cooling, is resolved into a series of fluctuations. The resistance then goes back to normal for a last time, and from then on the amplitude of the fluctuations decreases progressively. Them. are a few sharp penks at 0.003° below the beginning of the fluctuations. A similar picture is obtained on heating. With a magnetic field applied parallel to the axis of the wire, the curve is step-shaped, with level portions instead of peaks, Only at a sufficiently high magnetic field strength is there a sharp fall from the normal into the superconducting state, sharp fall from the normal into the superconducting state, sharp fall from the normal into the superconducting state, sharp fall from the normal into the superconducting state, sharp fall from the steps disappear, and the whole curve becomes asw-shaped. Similar curves are found, without magnetic field, with wires strained by drawing, and with an manuncladed wire of Ta. The observed discontinuities of the change of the electresistance are not due to fluctuations of the temp., nor to statistical fluctuations of the temp. The substance are not due to fluctuations of the temp,, these threads evidently congulate, giving rise to a particular transition state. The step-shaped curve in a longitudinal magnetic field, the saw-shaped form of the

curve results from a superposition of a no-of-sep transitions taking place in small volv. of the simple Pross the capil curves, in the absence of a magnetic field, the rate of growth of the muclei of the superconducting phase can be vaid to a few mm./sec. II. A. A. Galkin, B. G. Lararev, and P. A. Beaugirf (Phys.-Tech. Inst., Acad. Sci. Ukr. S.S.R., k-ev) Ibid. 987–94; cf. C.A. 43, 497bz. The velocity v of the displacement of the boundary between the normal and the superconducting states was detd. in 2 independent ways. One method consisted in oxillography of the voltage E at the ferminals of the secondary coil of a transformer with a superconducting core; the E induced in the coil depends both on the rate of change of the magnetic field H and or v. If the perturbation of the superconducting state begins at the perturbation. The dettin, were tinde on samples of lig and Son 8-10 cm. long, 0.4–1.0 mm. in diam., enclosed in glass envelopes 0.05 mm. chick. Expts. showed that at the instant of the perturbation, E is several times as great as in the normal state; hence,  $E(t)/E_0 = 1 + (s/e)/sre = k$ , and  $(v) > 2.5 \times 10^{-2} \times 10^{-2} = 10^{-2} \times 10^{-2} = 2 \times 10^{-2} \times 10^{-2} = 10^{-2}$ 

(over)



GALKIN, A. A.	101 101 101 101 101 101 101 101 101 101	USSR/Physics - Superconductivity  USSR/Physics - Superconductivity  (Contd)  Shows this velocity differs when superconductivity is disrupted by constant and variable tivity is disrupted by constant and variable tivity is disrupted Submitted 30 Mar 50.	Su Use	USER/Physics - Superconductivity  "Certain Peculiarities of the Transition to the Superconducting State, II," A. A. Galkin, B. G. Lazarev, P. A. Bezuglyy, Physicotech Inst, Aced Sci Ukrainian SSR	3 EEFOID PRAIRIES
	Carrie Bases and Action of the Control of the Contr				

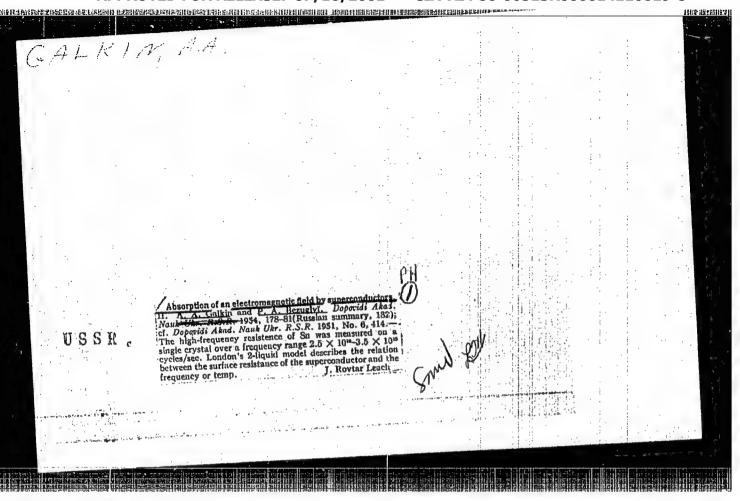


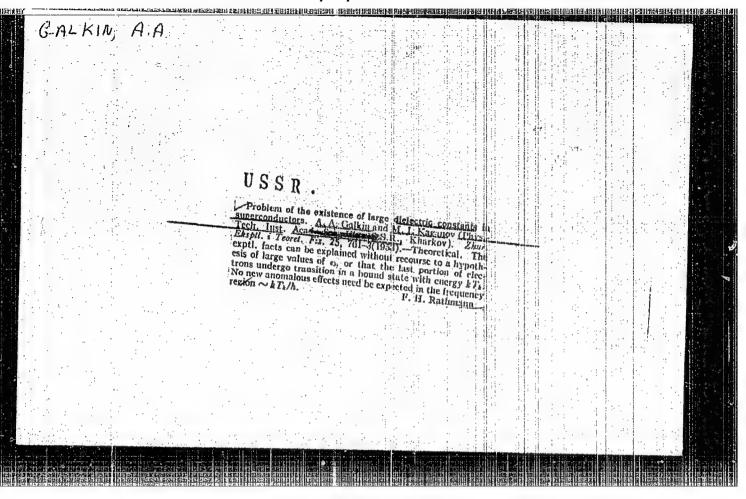
GALKIN, Aleksandr Aleksandrovich.

Academic degree of Doctor of Physico-Mathematical Sciences, based on his defense, 29 October 1954, in the Council of the Khar'kov State University imeni Gor'kiy, of his dissertation entitled: "Research on Superconductivity in Non-stationary Electromagnetic Waves."

Academic degree and/or title: Doctor of Sciences

SO: Decisions of VAK, List no. 12, 28 May 55, Eyulleten' MVO SSSR, No. 15, Aug 56, Moscow, pp. 5-24, Uncl. JPPS/NY-537





GALKIN, A. A.

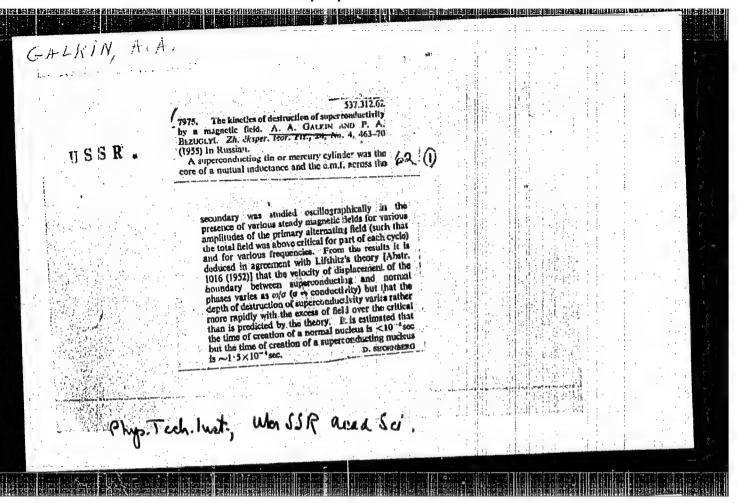
Dissertation: "Study of Superconductivity in Nonstationary Electromagnetic Fields."

Cand Phys-Math Sci, Khar'kov State U, Khar'kov, 1954. (Referativnyy Zhurnal--Fizika,

SO: SUM 393, 28 Feb 1955

Moscow, Aug 54)

GALKIN, A. A. USSR/Physics Card 1/1 : Galkin, A. A. and Bezugly, P. A. Authors : Frequency dependence of surface resistance isotherms of super-conductors Title Dokl. AN SSSR, 97, Ed. 2, 217 - 219, July 1954 Periodical Experiments were conducted to determine the frequency dependance of surface. resistances of super-conductors. An expression for Rs was derived and com-Abstract pared with experimental data. Nine references. Institution : Academician I. K. Kikoin, March 23, 1954 Presented by :



GALKIN, A.A

USSR/Atomic and Molecular Physics - Low Temperature Physics, D-5

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34440

Author: Galkin, A. A.

Institution: None

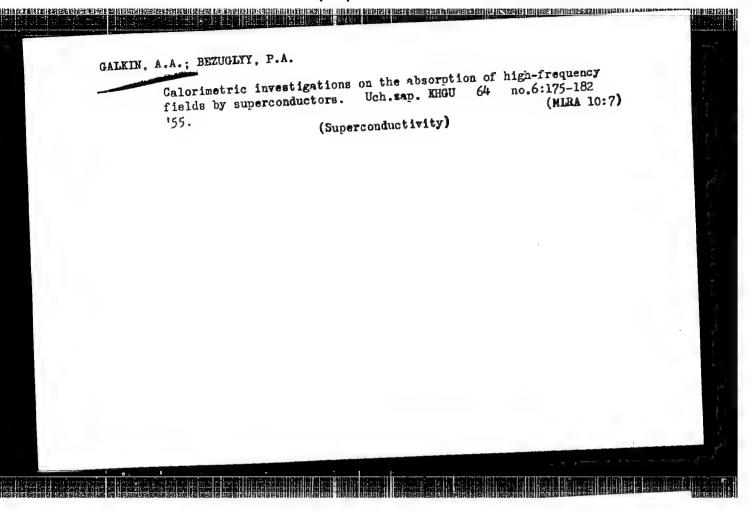
Title: On Critical Temperatures of Superconductors

Original Periodical: Uch. zapiski Khar'kovsk. un-ta, 1955, 64, 167-174

Abstract: To study the spectrum of quasiparticles in superconductors, it is interesting to search for the regions of anomalous absorption of high-frequency oscillations in the superconductor. For this purpose, the reflection from a grating made of Sn wires was studied at a frequency  $\sqrt{=1.8} \times 10^{10}$  and the reflection from thin of Sn films was studied at  $\sqrt{=3.7} \times 10^{10}$  cycles. The reflection was determined from Sn films was studied at  $\sqrt{=3.7} \times 10^{10}$  cycles. The reflection was determined from the standing-wave coefficient in a waveguide, inside which the investigated object was placed. Measurement with gratings has shown a change in reflection when superconductivity was annihilated by the magnetic field. The reflections from the films were used to compute approximately the electric conductivity of thin layers of Sn in normal state and the depth of penetration of the static field into the superconductor.

1 OF 1

- 1 -



GALKIN, A.A.

USSR/Atomic and Molecular Physics - Low Temperature Physics, D-5

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34441

Author: Galkin, A. A.

Institution: None

Title: Measurement of Surface Resistance of Superconducting Tin in the Microwave

Original Periodical: Uch. zapiski Khar'kovsk. un-ta, 1955, 64, 183-189

Abstract: A temperature curve was plotted for the active (R) and reactive (X) components of the surface resistance of chemically-pure ChDA-brand Sn at frequencies 3.5 x  $10^{10}$  and 4.5 x  $10^{10}$  cycles in the temperature range 2.2 -  $4^{\circ}$ K. The specimen was a small cylinder cast from Sn, the cavity and the internal surface of which were precisely cut on a lathe and mechanically polished and annealed. The temperature curve of  $R_{\rm g}/R_{\rm n}$  ( $R_{\rm g}$  and  $R_{\rm n}$  of the cavity in the superconducting and normal states) were determined by measuring the Q of the contour first in the superconducting state, then in the conducting state, at the specified temperature (after superimposing a constant magnetic field. The Q was estimated by sounding and comparing with the Q of a standard cavity.  $X_n$  (X of the metal in normal state) was calculated from the

1 of 2

-1 -

USSR/Atomic and Molecular Physics - Low Temperature Physics, D-5

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34441

Author: Galkin, A. A.

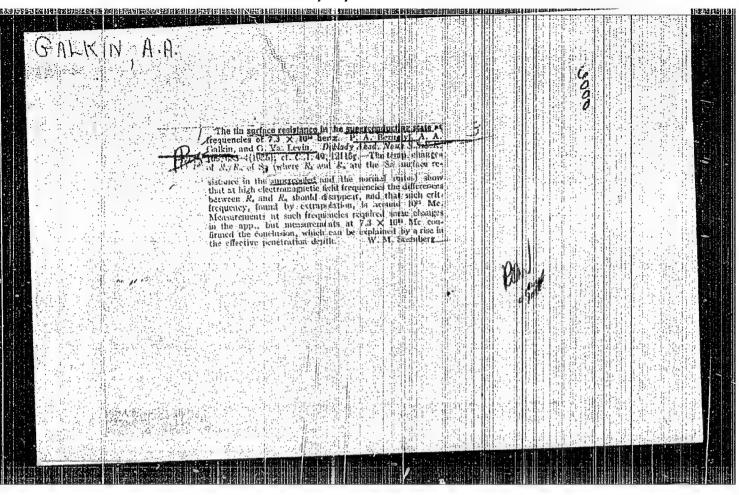
Institution: None

Title: Measurement of Surface Resistance of Superconducting Tin in the Microwave

Region

Original Periodical: Uch. zapiski Khar'kovsk. un-ta, 1955, 64, 183-189

Abstract: relationship  $X_n = \sqrt{3} R_n$ , which is valid under conditions of the anomalous skin effect.  $X_s$  (X in the superconducting state) was found from the equation  $X_s = X_n + \Delta X$ , where  $\Delta X$  is the change in X during the superconduction transition. X was measured from the shift in the natural frequency of the cavity. The temperature curves for  $R_s/R_n$  and  $\Delta X/X_n$  are given for 4.5 x 10<sup>10</sup> cycles and a conclusion is drawn that at 3.5 x 10<sup>10</sup> and 4.5 x 10<sup>10</sup> the effective dielectric constant remains negative for superconducting Sn. Summing up the results of the measurement of the dielectric constant of the superconductor at 4 frequencies (2.4 x 10<sup>10</sup>, 2.75 x 10<sup>10</sup>, 3.5 x 10<sup>10</sup>, and 4.5 x 10<sup>10</sup> cycles) the author thinks that the constant introduced into the theory of superconductivity in connection with the polarizability of the superconductor has so far not been justified experimentally.



Bezuglyy, P.A. (Bezuhlyy, P.A.) and Galkin, 0.0. (Halkin, 0.0.) AUTHORS: On the Absorption by Superconducting Tin of Electromagnetic Radiation of Frequencies 8.3x1010 and 11.1x1010 cycles (0 pogloshchenii sverkhprovodyashchim olovom elektromagnitnogo izlucheniya chastoty 8.3x1010i 11.1x1010 gerts) TITLE: Dopovidi Akademii Nauk Ukrainstkoi RSR, 1957, Nr 5, pp. 436-PERIODICAL: 438 (USSR) The temperature-dependence of the ratio  $\frac{R_s(T)}{R_s}$  (where  $R_s$  is surface resistance in the superconducting state and R is sur-face resistance in the normal state) in a tin sample was ABSTRACT: studied at frequencies of 8.3x1010 and 11.1x1010cps. The range of temperatures employed was from 1.5° to 40K. sample was a tin single crystal polished by the electrolytic method. Its purity was 99.99%. The results of measurements are shown in the figure of the article where the values of the ratio are represented by ordinates and absolute temperatures by abscissae. These data show that at the frequencies. used, the difference between Rs and Rn is preserved, decreasing with the rise of frequency. Inasmuch as surface resistance does not approach zero at temperatures approximating Card 1/2

#### "APPROVED FOR RELEASE: 07/16/2001

#### CIA-RDP86-00513R000614110019-8

21-5-3/26

On the Absorption by Superconducting Tin of Electromagnetic Radiation of Frequencies 8.3x10^{10} and 11.1x10^{10} cycles

absolute zero, the authors conclude that this indicates the quantum absorption of electromagnetic radiation by superconducting electrons. There is one figure and 7 references, 5 of which are Slavic.

Physico-Technical Institute of the AN Ukrainian SSR

PRESENTED:

ASSOCIATION:

By B.G. Lazarev (B.H. Lazarev), Academician of the AN Ukrainian SSR

SUBMITTED:

2 February 1957

AVAILABLE:

Library of Congress

Card 2/2

AUTHOR: TITLE:

GALKIN, A.A., SHAMFAROV, YA.L., STEFANISHINA, A.V. 56-6-46/56 Electron Resonance on the Occasion of the Passage of Current

through Liquids. (Elektromyy rezonans v rastvorakh pri prokhozh-

denii toka, Russian)

PERIODICAL:

Zhurmal Eksperim. i Teornt. Fiziki, 1957, Vol 32, Nr 6, pp 1581-1581

(U.S.S.R.)

ABSTRACT:

If NaCl which was dissolved in ammonia is exposed to the high frequency field of a radiospectrometer and if then a current is made to pass through the solution, a resonance line forms which corresponds to the Na-line in liquid NH3. The intensity of the line depends on the amperage. If the solution is cooled in liquid nitrogen. during the passage of the current, the color of the liquid is conserved also after the current is switched off. A recombination of the electrons with chlorine does not take place. By this method it should be easy to determine the nature of a number of liquids.

(With 2 Illustrations and | Slavic Reference).

ASSOCIATION:

Radiophysical and Electronic Institute of the Academy of Science

of the U.S.S.R.

PRESENTED BY:

STEPLET MEITS

23.3.1957

AVAILABLE:

Library of Congress

Card 1/1

GALKIN, A.A., KAN, Ya.S., LAZ MEV, B.G.

56-6-47/56

AUTHOR: TITLE:

On the Jump-Like Damping of the Current in a Supraconductive Ring. (O skachkoobraznom zatukhanii toka v sverkhprovodyashchem

PERIODICAL:

Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 6, kolitse, Russian)

pp 1582 - 1582 (U.S.S.R.)

ABSTRACT:

A thin leading located coaxially with a coil is cooled down to the temperature of liquid helium, and in it a current is induced. If the lead ring is evenly heated (10-4 to 10-50/sec) an EMF will be generated in the coil. On this occasion it will be noticed that the current dies down abruptly. These current jumps have aduration of some seconds. In the intervals between jumps have accurrent remains equal. At  $4.2^{\circ}K$ ,  $\Delta I/I \approx 10^{-4}$ . The effective resistance which corresponds to the damping of the current at the places where the jumps occur, amounts to \$10-11\Omega\$. (1 illustrations and 2 Slavic references)

ASSOCIATION:

Physical-Technical Institute of the Ukrainian Academy of Science. (Fisiko-tekhnicheskii institut Akademii nauk U.S.S.R.)

PRESENTED BY:

SUBMITTED:

13.3.1957

Library of Congress AVAILABLE

Card 1/1

CALKIE, M.A.

AUTHORS:

Bezug'lyy, P. A., Galkin, A. A.,

56-4-1

TITLE:

The Cyclotron Resonance in Tinat a Frequency of 9300 mc (latter to the Editor) (Tsiklotronmy resonans v olove pri chastote 9300 mg. 0,

PERIODICAL:

Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 4, . . . .

-1078, (USSR)

ABSTRACT:

In a magnetic field that runs exactly parallel to the surface of a metal sample it is possible that a cyclotron resonance occurs. In order to prove the existence of the latter the dependence of the active portion of the surface resistance of a tin sample on the field intensity of a constant magnetic field at 9300 Hiz was experimentally taken. The tin sample consisted of a 0,8 mm thick, electropolished, monocrystalline wire in which the fourth order axis conincided with an accuracy up to 50 with the axis of the wire. The sample was placed in a coaxial copper resonator. The measurements were made at 4,20K and 20K. From the resulting curves it may be seen that a monotonous decline of the resistance is to be observed in fields larger than 4000 Oe. At  $H_1 = 3600$  and  $H_2 = 900$ Oe, 2 resonance minima were noticed. At the lower temperature the minima emerge more clearly. At the same time, however, they lift somewhat toward the side of the field intensity. A rotation of the sample by 900 opposite the constant magnetic field furnishes almost the same results. These data are in good agreement with other experimental results. There are 4 Slavic references.

Card 1/2

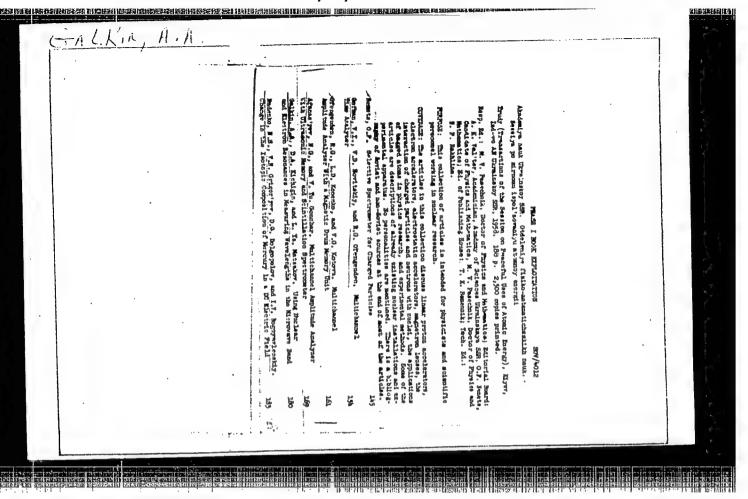
The Cyclotron Resonance in Tin at a Frequency of 9300 mc (Letter to the Editor)

ASSOCIATION: Physico-Technical Institute AN Ukrainian SSR (Fiziko-technichesziy institut Akademii nauk Ukrainskoy SSR)

SUBMITTED: July 29, 1957

AVAILABLE: Library of Congress

Card 2/2



307-120-56-3-16/33

AUTHORS: Galkin, A. A., Kichigin, D. A.

TITLE: A Device for Electron Resonance Studies over a Wide Temperature Range (Pribor dlya izucheniya elektronnogo rezonansa v shirokoy oblasti temperatur)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1953, Nr 3, pp 71-72 (USSR)

ABSTRACT: Zavoyskiy's original simple grid-current method of studying EPR resonance is modified by inserting a semiconductor
between the plates of the condenser in the oscillatory circuit. The semiconductor has to be one which is of good
light sensitivity; then the loss component introduced by
the semiconductor can be evaluated by illuminating it with
a chopped light beam of known strength. A method is thereby
provided of standardizing the oscillatory circuit if the
EPR line varies in any way with temperature, since the semiconductor can be kept on strictly standardized conditions.
The coaxial line to the coil round the specimen is constructed of German silver (to minimize heat transfer). The

Card 1/2

30V-120-58-3-16/33

.A Device for Electron Resonance Studies over a Wide Temperature Range

semiconductor (Cu<sub>2</sub>0) is illuminated via holes in one of the plates of the capacitor. The article contains 1 figure and 2 references, both (Soviet) to Zavoyskiy's original studies.

ASSOCIATION: Institut radiofiziki i elektroniki AN USSR (Institute of Radiophysics and Electronics, Academy of Sciences, Ukrainian SSR)

SUBMITTED: September 9, 1957.

1. Electrons--Resonance 2. Resonance--Temperature factors

3. Semiconductors--Applications

Card 2/2

SOV/126-6-4-33/34

AUTHORS: Galkin, A. A. and Kichigin, D. A.

ार करण हास कर समामान के श्रीतीय संस्थाता स्थापन के सामन्य माना के लिए कर है। स्थापन समाज के कर है। कर स्थापन कर समाज के सम

Influence of Plastic Deformation on the Width of the TITLE: Electron Resonance Line (Vliyaniye plasticheskoy

deformatsii na shirinu linii elektronnogo rezonansa)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1958, Vol 6, Nr 4, p 767-768 (USSR)

ABSTRACT: A number of papers (Refs 1-6) are devoted to investigating

electron resonance in metals. In these, the dependence

of the width of the line on the temperature, the quantity of admixtures and the particle size have been investigated in detail. In this paper experiments are described on elucidating the influence of plastic

deformation on the resonance effects. It is known that

in the case of plastic deformation residual micro-

stresses accumulate in a crystal which lead to an excess of potential energy (Ref 7). However, if investigation of the plastic deformation is effected at room temperature, it has relatively little influence on the electric

conductivity and the Hall effect of the metals. The width of the electron resonance line for lithium is

Card 1/4

SOV/126-6-4-33/34

Influence of Plastic Deformation on the Width of the Electron Resonance Line

Therefore, the sensitive to admixtures (Ref 6). influence of plastic deformation on the electron resonance was investigated for lithium, specimens of which were plastically deformed by rolling on glass at room temperature. The specimens were rolled down to a thickness of 0.1 to 0.05 mm. After rolling, the foil was coiled and placed into a glass ampule filled with dehumidified oil. The ampule with the specimen was placed into the coil of an oscillator circuit operating The indication of electron resonance at 350 Mc/sec. was by means of the method of Zavoyskiy (Ref 8). The width of the electron resonance line after plastic deformation was 20 Oe. Thus, plastic deformation of lithium at room temperature led to an increase to double of the width of the line. After "annealing" of effected at room temperature, the width of the foil. the line contracts reaching 10 Oe. after 40 to 60 hours. For elucidating the kinetics of removing the stresses in lithium, a series of measurements were carried out of the dependence of the width of the line on the time for the

Card 2/4

SOV/126-6-4-33/34

Influence of Plastic Deformation on the Width of the Electron Resonance Line

annealing temperature 293 and 373°K. For this purpose, after rolling at 293°K the foil was cut into two halves and the obtained specimens were annealed at 293 and 375°K. The graph, Fig 1, shows the dependence of the width of the line on the time for the two specimens; as was to be expected annealing at 100°C is considerably faster than at 20°C. From the temperature curves  $\Delta$  H(t) the activation energy was calculated which was found to equal about 1500 cal/mol. A similarly small activation energy during plastic deformation was also observed by Khotkevich (Ref 7). It is possible that the dependence of the width of the line on the dimensions of the particles observed by Garif'yanov (Ref 5) can be explained by the fact that in finer particles the residual deformations, caused during the breaking up, are

Card 3/4

SOV/126-6-4-33/34

Influence of Plastic Deformation on the Width of the Electron Resonance Line

removed almost instantaneously, whilst the removal of the deformations in larger particles is a considerably slower process. In Fig.1 the dependence is graphed of the width of the resonance curve (Oe) on the annealing time (hours). The top curve relates to annealing at room temperature, the bottom curve relates to annealing at 600 C.

There are 1 figure and 8 references, 3 of which are Soviet, 5 English.
(Note: This is a complete translation)

ASSOCIATION: Khar'kovskiy pedagogicheskiy institut (Khar'kov Pedagogic Institute) SURMITTED: April 8, 1957

Card 4/4

AUTHORS:

Galkin, A. A. and Kichigin. D. A.SOV/65-58-7-2/12

TITLE:

Investigations on the Paramagnetic Resonance in Coal From the Donets Basin (Issledovaniye paramagnitnogo rezonanea v kamennykh uglyakh Donetskogo basseyna).

PERIODICAL:

Khimiya i Tekhnologiya Topliv i Masel, 1958, Nr. 7.

pp. 8 - 14. (USSR).

ABSTRACT:

Investigations on the structure of substances can be carried out by defining the paramagnetic resonance. It was aimed to find the connection between the geological growth of coal and the intensity and width of the paramagnetic resonance (PR) line. The present studies concerned the PR in the component structure of coal which helped during investigations on the PR in coals of various petrographic composition. Apart from this, the PR curves can be used for defining some physico-chemical constants. The method of Ye.K. Zavoyskiy (Ref.9) was used. Setting up of the apparatus: Fig.1; samples of coal from the Donets Basin, differing in their geological growth and technical and petrographic composition, were tested. The intensity of the PR line is maximal in anthracite and minimal in slow-burning coal. This agrees with the findings of S. Uebersfeld et al (Ref.3). Fig.2: a diagram on the dependence of the intensity of the PR line on the

Card 1/3

SOV \$5-58-7-2/12 Investigations on the Paramagnetic Resonance in Coal From the Donets Basin.

geological growth of coal samples. Tests were carried out on fusite (mineral charcoal), vitrain gas coal (a variety of bituminous coal), and also on some samples of fusite slow-burning coal and coke. It was concluded that a relationship exists between the intensity of the PR line and the degree of metamorphosis of the coal, and that the former increases with increasing geological growth of coal (Fig. 3). The width of the PR line of various types of anthracite ranges from 0.5 to 3.5 oersteds, and for other coals it ranges from 6 - 7 oersteds. The structural components of coal affect the width and the intensity of the PR line. The PR line of fusite of coke, gaseous, and slow-burning coal is identical within the limits of experimental error. The static spin susceptibility of coal was calculated by comparing the intensity of the electronic and nuclear resonances, and from this the order of magnitude of the concentration of electrons in one gram of coal determined. There are 2 Tables, 3 Figures and 12 References: 5 Soviet. 4 English and 3 French.

Card 2/3

307/65-58-7-2/12

Investigations on the Paramagnetic Resonance in Coal From the Don Basin.

ASSOCIATION: Kharkovskiy pedagogicheskiy institut. (Kharkov Teachers' Institute).

Institut radiofiziki i elektroniki AN USSR (Institute of Radiophysics & Mischronics of the USSR Academy of Sciences)

1. Coal-Sturctural analysis 2. Coal-Magnetic factors

Card 3/3

. CALKIN HY

AUTHORS:

Bezuglyy, P. A., Calkin, A. A.

56-1-40/56

TITLE:

The Cyclotron Resonance in Lead at a Frequency of 8900 Megacycles. (Teiklotronnyy rezonans v svintse pri chastote

8900 mggts)

PERIODICAL:

Zhurnal Eksperimental noy i Teoreticheskoy Fiziki, 1958,

Vol. 34, Nr 1, pp. 236-237 (USSR)

ABSTRACT:

The present paper shortly reports on the results of the experiments made on the observation of the cyclotron-resonance of lead at 8900 megacycles. At first the reasons for the selection of lead as test-object are given. A monocrystalline lead wire, ~ 12 mm in length and ~0.8 mm in diameter, served as sample. A coaxial copper resonator was fastened along the axis. The surface resistance of the sample was investigated by the same method as employed by the same authors in the investigations of the cyclotron-resonance in tin (reference 5). The results of the measurements of R(H)/R(1300) in lead at the frequency of 6900 megacycles at the temperatures 4.2 K and 2 K are given in a diagram. R(H) signifies the surface resistance in a constant field with more than 1300 cersted field strength.

Card 1/2

The Cyclotron Resonance in Lead at a Frequency of 8900 Megacycles

56-1-40/56

This diagram clearly shows the important influence exerted by the relaxation time of the electrons upon this phenomenon. At 4.2 K only a monotonous decrease in the resistance with increasing field strength is observed, but at 2 K and H~2400 cersted a fairly low resonance-minimum exists. After this minimum follows a maximum and then the surface resistance rapidly decreases in agreement with the forecast of theory. In lead (just as in tin) the main groups of the electrons supposedly are responsible for the cyclotron resonance. There are 1 figure and 6 references, 4 of which are Slavic.

ASSOCIATION:

Physical-Technical Institute AN Ukrainian SSR

(Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskey SSR)

SUBMITTED:

October 5, 1957

AVAILABLE:

Library of Congress

Card 2/2

13,41A/N

AUTHORS:

Bezuglyy, P. A., Galkin, A. A.

56-1-41/56

TITLE:

An Investigation of the Surface Resistance of Tin in Weak

Magnetic Fields (Issledovaniye poverkhnostnogo

soprotivleniya olova v slabykh magnitnykh polyakh)

PERIODICAL:

Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958,

Vol. 34, Nr 1, pp. 237-238 (USSR)

ABSTRACT:

The authors investigated this surface resistance at field strengths up to loo cersted with a method already described earlier (reference 3). The results of these experiments at a frequency of 9300 mega-cycles and a temperature of 4,2 K are here illustrated in a diagram. In agreement with the forecast of theory the active resistance of the metal at field strengths up to lo oersted is practically independent on the field strength, i. e. at  $H\rightarrow 0$  applies  $dR/dH\rightarrow 0$ . When H > lo ocrated the surface resistance monotonously decreases with increasing field strength. In measurements of the temperature dependence of  $R_{\rm s}/R_{\rm n}$  in semiconductors it has to be reckoned with the dependence of the surface

Card 1/2

resistance of metals on the strength of the magnetic field. In this connection R and R signify the surface resistances

An Investigation of the Surface Resistance of Tin in Weak 56-1-41/56 Magnetic Fields

> of the metal in the superconducting and in the normal state respectively. A disregarding of this fact would lead to increased values of R /R & There are 1 figure and 3 references, all of which are Slavic.

ASSOCIATION: Physical-Technical Institute AN Ukrainian SSR (Fiziko-

-tekhnicheskiy institut Akademii nauk USSR)

SUBMITTED: October 5, 1957

AVAILABLE: Library of Congress

Card 2/2

AUTHORS:

Galkin, A. A., Korolyuk, A. P.

56-34-4-49/60

TITLE:

The Dispersion of Sound Velocity in Metals in a Magnetic Field (Dispersiya skorosti zvuka v metallakh v magnitnom pole)

PERIODICAL:

Zhurnal eksperimental noy i teoreticheskoy fiziki, 1958,

Vol. 34, Nr 4, pp. 1025 . 1026 (USSR)

ABSTRACT:

The dispersion of sound velocity in hard metals predicted by R. A. Alpher and R. I. Rubin (Ref 1) has hitherto not been observed, apparently because of the smallness of the effect. The present report describes experiments connected with the discovery of this phenomenon. An apparatus was developed and built for the investigation of slight variations of the sound vibrations which, in the case of favorable conditions, makes it possible to measure relative deviations of about 1000 from sound velocity. The principle of the measurements is based on the comparison and the measuring of the phase difference of the vibrations passing through the sample to be investigated. The block scheme of the measuring apparatus is shown by a diagram. The high frequency voltage originating from a generator (stabilized by means of quartz)

Card 1/3

The Dispersion of Sound Velocity in Metals in a Magnetic Field 56-34-4-49/60

is transferred to the radiating quartz which on one side was stuck on to the cylindrical sample. The receiving quartz is then stuck on to the second front face of the sample, and the voltage produced by it is then transferred to a phase. meter. At the same time a voltage is directly transferred to the phasemeter from the radiating crystal. For the investigation of the ultrasonic vibrations quartz plates (x-section) of a diameter of to mm were used. Cylindrical rods of a length of 20 cm and a thickness of 1.4 cm served as samples. A diagram shows the results of these experiments, which were carried out at room temperature in a field vertical to the axis of the sample. The experimental points fit well on the theoretically calculated straight lines. Sound velocity thus increases proportionally to H2 in the magnetic field and the intensity of the effect corresponds to the predictions of theory. It is interesting to learn that in bismuth no dispersion of the sound velocity was observed at room temperature. Finally, the authors thanked Professor A. I. Akhiyezer and S. V. Peletminskiy, who had directed their attention to the discussed phenomenon. There are 2 figures and 2 references,

Card 2/3

The Dispersion of Sound Velocity in Metals in a Magnetic Field 56--34--4-49/60

ASSOCIATION:

Institut radiofiziki i elektroniki Akad emii nauk Ukrainskoy

(Institute of Radiophysics and Electronics AS Ukrain ian SSR)

SUBMITTED: January 14, 1958

1. Sound—Refraction 2. Metals—Acoustic properties

Card 3/3

CIA-RDP86-00513R000614110019-8" APPROVED FOR RELEASE: 07/16/2001

24(1), 24(3)

AUTHORS:

Galkin, A. A., Kerolyuk, A. P. SOV/56-36-4-52/70

TITLE:

Anisotropy of the Absorption of Ultrasonics in Metals in the Magnetic Field (Anizotropiya pogloshcheniya ul trazvuka v

metallakh v magnitnom pole )

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,

Vol 36, Nr 4, pp 1307-1309 (USSR)

ABSTRACT:

It has already been shown that for longitudinal sound the absorption coefficient in tin depends on the magnetic field in such a manner, that if the latter is vertical to the wave vector, a weakly marked maximum of absorption occurs in certain fields; a similar phenomenon is observed in polycrystalline copper and in indium. In the present "Letter to the Editor" experiments are discussed in which the influence exercised by the magnetic field on the absorption of ultrasonics at low temperatures in polycrystalline samples of very pure metals was investigated. Tin with a residual resistance

'1.6.10<sup>-5</sup> and zinc with  $R_{4.2}/R_{300} = 2.10^{-4}$  was investigated.

Card 1/3

The samples had a diameter of 12 and a length of 12 and 15 mm respectively. The absorption coefficients were determined by

Anisotropy of the Absorption of Ultrasonics in Metals in the Magnetic Field

507/56-36 4-52/70

means of the well-known pulse method at frequencies of 17.3, 23.3, 51, and 70 megacycles. Figure 1 shows the results obtained by measurements carried out at 4.20 K with a magnetic field that was vertical to the wave vector. The curves plotted at higher frequencies show already two maxima. Thus, zinc at 70 megacycles showed a minimum at about 500 Oe, the first maximum at about 800, and a second flat maximum at about 2,000 Oe. If the magnetic field rotates in a plane that is vertical to the sample axis, the curves are found to vary essentially: The absorption of the maxima and their amount varies, in the case of certain directions these maxima vanish, and in certain cases the maxima exist only within range of the angles of 15-20°. Figures 2 and 3 show such diagrams at 70 megacycles. Here the absorption coefficient for ultrasonics shows a tendency of assuming a saturation value at 5,000-6,000 Oe. This limiting value depends on the crientation of the sample in the field. The diagrams for the limiting value in the case of strong fields describe the anisotropy of electric conductivity in the magnetic field. There are 3 figures and 6 references, 1 of which is Soviet.

Card 2/3

Anisotropy of the Absorption of Ultrasonics in Metals in the Magnetic Field

sov/56-36-3-52/70

ASSOICIATION: Institut radiofiziki i elektroniki Akademii nauk Ukrainskoy SSR (Institute for Radiophysics and Electronics of the Academy of Sciences, Ukrainskaya SSR), Fiziko-tekhnicheskiy institut the Academy of Sciences, Ukrainskaya SSR (Physico-technical Institute of Ukrainskaya SSR)

SUBMITTED:

December 12, 1958

Card 3/3

24 (1)

AUTHORS:

Bezuglyy, P. A., Galkin, A. A.

SOV/56-36-6-61/66

Korolyuk, A. P.

TITLE:

The Anisotropy of the Absorption Coefficients of Ultrasonics in Superconductors (Anizotropiya koeffitsiyentov pogloshcheniya

ul'trazvuka v sverkhprovodnikakh)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959

Vol 36, Nr 6, pp 1951 - 1952 (USSR)

ABSTRACT:

By the investigation of the absorption of ultrasonics in superconductors it is possible to determine the size of the energy slit at T = 0 as well as the dependence of the slit width  $(\xi_0)$ 

on temperature. The experiments carried out in this connection are in agreement with theory. By means of experiments also the influence exercised by the isotope composition and the homogeneous lattice deformation upon  $\mathbf{T}_{\mathbf{k}}$  and on the width of the

slit was investigated. It may be imagined that lattice anisotropy leads to more visible results than isotopic composition. In the present—"Letter to the Editor" experimental results concerning the absorption of ultrasonics (frequency 70 kilocycles) in superconductive and normal media are published. (Determina-

Card 1/2

The Anisotropy of the Absorption Coefficients of Ultrasonics in Superconductors

SOV/56-36-6-61/66

tion of the absorption coefficient in the  $C_2$ - and  $C_4$ -axis of a spherical tin sample). The results, which were dealt with by the method developed by Bardeen, Cooper and Schrieffer (Ref 4) are shown in a table. It was found that the temperature dependence of the ratio of the absorption coefficient  $\alpha/\alpha$  is different in the two directions. The case of sound propagation along the  $C_4$ -axis agrees better with the isotropic theory of superconductivity. There are 1 table and 4 references, 1 of which is Soviet.

ASSOCIATION:

Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR (Physico-technical Institute of the Academy of Sciences, Ukrainskaya SSR)

SUBMITTED:

April 7, 1959

Card 2/2

BERGHERMAN I FRINCESIAN FRANCESIAN DE BENEFIN DE BENEFIN DE PRESENTATION DE BRANCE DE LA RESOLUTION DE

24 (1)
AUTHORS: Galkin, A. A., Korolyuk, A. P. SOV/56-37-1-53/64

TITLE: Oscillation of the Sound Absorption Coefficient in Lead at Low Temperatures (Ostsillyatsii koeffitsiyenta pogloshcheniya zvuka

v olove pri nizkikh temperaturakh)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37,

Nr 1, pp 310 - 312 (USSR)

ABSTRACT:

It has already been shown (Refs 1-3) that the absorption coefficient of ultrasonics in metal does not change monotonely with the magnetic field, but that it has a special anisotropy. The authors of the present "Letter to the Editor" investigate the latter at an ultrasonic frequency of 70 megacycles and give a report on the results obtained. Investigations were carried out in a spherical monocrystalline lead sample of 15 mm diameter. Planes were cut off from the sphere, to which the ultrasonic sources were applied. The perpendicular lines of these planes were parallel to the axes of 2. and 4. order. Absorption was in-

vestigated for longitudinal sound, the wave vector  $\overrightarrow{k}$  of which was parallel to the axis of 2. or 4. order. The sample was ro-

Card 1/3 tated in the magnetic field H, with the k-vector remaining per-

Oscillation of the Sound Absorption Coefficient in SOV/56-37-1-53/64 Lead at Low Temperatures

pendicular to H. Figure 1 shows the course of the amplitude in dependence on the field strength (45 - 1000 0e) at T = 4.20K, for sound propagation along the axis of second order; H was parallel to the axis of 4. order. The curve has a manifold of marked maxima and minima (of V. Gurevich, Ref 4). From the oscillation periods the magnitude of the limiting momentum of the electron was estimated at  $p = 5.10^{-20}$  g.cm/sec. Figure 2 shows the dependence of the projection of the limiting momentum of the electrons on to the plane (001) as a function of the angle between the axes of 2. and 4. order, developed according to oscillation periods. Figure 3 shows several results of measurements of the absorption coefficient in dependence on the magnetic field voltage and the angle of rotation  $\varphi$  in the (001)plane. Figure 4 shows the angular dependence of the absorption coefficient at  $H = 7.10^3$  Oe and with rotation of the field in the (001)-plane. The investigation of sound absorption in a field H k shows that the curve α(H) has singular points. According to the theory by V. Guravich, the magnetic field in

Card 2/3

Oscillation of the Sound Absorption Coefficient in SOV/56-37-1-53/64 Lead at Low Temperatures

> these points satisfies the condition  $H_i = const/n$ , where n is an integer number. There are 4 figures and 4 references, 2 of which are Soviet.

Institut radiofiziki i elektroniki Akademii nauk Ukrainskoy SSR ASSOCIATION: (Institute of Radiophysics and Electronics of the Academy of

Sciences, Ukrainskaya SSR)

SUBMITTED: March 25, 1959

Card 3/3